

REMARKS

The specification has been amended to make editorial changes including those noted in the Official Action to place the application in condition for allowance at the time of the next Official Action.

Claims 1-10 were previously pending in the application. Claims 2 and 7 are canceled, leaving claims 1, 3-6 and 8-10 for consideration.

Claims 1, 2, 6 and 7 are rejected as anticipated by CHANG et al. 5,672,543. This rejection is respectfully traversed.

Claim 1 provides that a titanium nitride film has a compressive stress of not higher than  $3 \times 10^9$  dyne/cm<sup>2</sup> so that the titanium film has such a high stability as preventing any crack upon changing the compressive stress to a tensile stress by a heat treatment.

The Official Action has indicated Table 1 on column 4, lines 25-40 of CHANG et al. as providing support for a titanium nitride film free of any crack and having a tensile stress of not higher than  $3 \times 10^9$  dyne/cm<sup>2</sup>. However, as seen from Table 1 of CHANG et al. in conjunction with column 4, lines 4-6 of CHANG et al., wherein a compressive stress is indicated by a "-", each of the values in column 1 of Table 1 of CHANG et al. is greater than  $3 \times 10^9$  dyne/cm<sup>2</sup>. Accordingly, each of the titanium nitride

films of CHANG et al. has a compressive stress higher than  $3 \times 10^9$  dyne/cm<sup>2</sup>.

Claim 6 provides wherein a titanium nitride film free of any crack has a tensile stress of not higher than  $2 \times 10^9$  dyne/cm<sup>2</sup>.

Column 4, lines 4-6 of CHANG et al. disclose that tensile stress is represented by a "+". As seen in Table 1 of CHANG et al., each of the values of tensile stress is greater than  $2 \times 10^9$  dyne/cm<sup>2</sup>. Specifically, the lowest value in column 5 (after furnace (450°C)) is a tensile stress of  $+3.69 \times 10^9$  dyne/cm<sup>2</sup>.

Accordingly, CHANG et al. neither disclose nor suggest a compressive stress of not higher than  $3 \times 10^9$  dyne/cm<sup>2</sup> as recited in claim 1 nor a tensile stress of not higher than  $2 \times 10^9$  dyne/cm<sup>2</sup> as recited in claim 6 of the present application. As the reference does not disclose that which is recited, the anticipation rejection is not viable. Reconsideration and withdrawal of the rejection are respectfully requested.

Claims 3 and 8 are rejected as unpatentable over CHANG et al. in view of KAMATA et al. 5,244,820. This rejection is respectfully traversed.

KAMATA et al. is only cited for the teaching of a titanium nitride film oriented in a (200) face. KAMATA et al. do not teach or suggest a titanium nitride film having a compressive

stress of not higher than  $3 \times 10^9$  dyne/cm<sup>2</sup> so that the titanium film has such a high stability as preventing any crack as recited in claim 1. KAMATA et al. also do not teach or suggest a titanium nitride film free of any crack and having a tensile stress of not higher than  $2 \times 10^9$  dyne/cm<sup>2</sup> as recited in claim 6. As set forth above, CHANG et al. do not disclose or suggest what is recited in claims 1 and 6. Since claims 3 and 8 depend from claims 1 and 6, respectively, and further define the invention, the combination of references would not render obvious claims 3 and 8.

Claims 4, 5, 9 and 10 are rejected as unpatentable over CHANG et al. in view of MIYAMOTO 5,747,384. This rejection is respectfully traversed.

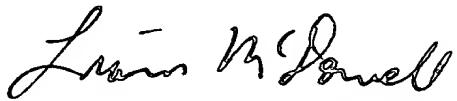
MIYAMOTO is only cited for the teaching of an aspect ratio of not less than 4 or 5. MIYAMOTO does not teach or suggest a titanium nitride film having a compressive stress of not higher than  $3 \times 10^9$  dyne/cm<sup>2</sup> so that the titanium film has such a high stability as preventing any crack as recited in claim 1 or a titanium nitride film free of any crack and having a tensile stress of not higher than  $2 \times 10^9$  dyne/cm<sup>2</sup> as recited in claim 6 of the present application. As set forth above, CHANG et al. do not disclose or suggest these features. Since claims 4, 5, 9 and 10 depend from claims 1 and 6, respectively, and further define the invention, the proposed combination of references would not render obvious claims 4, 5, 9 and 10.

In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17.

Respectfully submitted,

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